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ANS-137 *May 17, 2026*

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The AMSAT® News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation.

ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on https://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org <http://amsat.org>

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

AMSAT “Radio Adventure” at Hamvention

The theme of this year’s Hamvention is “Radio Adventure,” and AMSAT has been highlighting the adventure of satellite communication for visitors to its large exhibit area. Occupying its usual spot in the northwest corner of Building One at the Greene County Fairgrounds and Event Center in Xenia, Ohio, AMSAT Engineering, Education, Youth Outreach, and User Services provided a rich collection of resources and information to visitors.

Business was brisk at the “Beginner’s Corner” where new hams and hams new to satellites came to have questions answered and to purchase print copies of the book, *Getting Started with Amateur Satellites*.

The AMSAT Store was active, supplying shirts, caps, CubesatSIMS, frequency charts, and Arrow Antennas to satellite enthusiasts. Many AMSAT members also stopped by to renew their AMSAT memberships for another year, and a few made donations to join the AMSAT President’s Club.

AMSAT Engineering drew crowds to view the prototype of the GolfTee satellite currently in development, as well as to speak to engineering volunteers on hand about the FoxPlus project and to see a prototype of the SDR Gen 2 transponder board.

AMSAT Education drew considerable interest as live demonstrations of both

the CubesatSIM and CubesatSIM Lite were underway.

And youngsters were drawn to the BuzzSat <https://buzzsat.com/> exhibit where they enjoyed coloring pages from the BuzzSat “Satellites in Space” Coloring Book and working through “Satellites in Space Help Us Live a Better Life on Earth” Free Online Courses on laptop computers available in the display.

At the AMSAT/TAPR Banquet, Ray Roberge, WA1CYB, a member of AMSAT’s Engineering team, spoke about progress on AMSAT’s SDR Gen2 project, including what it does and where it can be used.

[ANS thanks AMSAT for the above information.]

LIMITED TIME OFFER!!!

AMSAT is offering a limited-time promotion for new and renewing members that includes a free digital copy of Getting Started with Amateur Satellites. The promotion is being offered as AMSAT begins the 2026 membership year.

[image: Getting Started]

Anyone who joins or renews their AMSAT membership during the promotional period will receive a download link for the latest edition of Getting Started with Amateur Satellites in their membership confirmation email. JOIN TODAY at https://launch.amsat.org/ <https://launch.amsat.org/> (Remember! Students join for FREE!)

VUCC Satellite Standing May 2026

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VUCC Satellite Award/Endorsement Change Summary for April 01, 2026 to May 01, 2026.

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W5CBF 1788 1895
WC7V 1621 1626
EA2AA 1206 1214
WA5LRC New 1091
E7ØA 901 1023
RA3S 654 838
KB1HY 732 752
HB9GWJ 651 702
LA6OP 663 700
AF5CC 656 657
JH8RZJ 328 561
PY2YJ 266 291
WB5TX 165 170

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Congratulations to the new VUCC Satellite holder

WA5LRC

[ANS thanks Jon Goering, N7AZ, for the above information.]

The 2026 President’s Club Coin is Here!
Help Support GOLF and FoxPlus.

[image: Presidents' Club 2026 Coin]

Annual memberships start at only $120
Join the AMSAT President’s Club today and help

Keep Amateur Radio in Space!
https://www.amsat.org/join-the-amsat-presidents-club/
<https://www.amsat.org/join-the-amsat-presidents-club/>

DXCC Satellite Standing May 2026

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DXCC Satellite Award/Endorsement Change Summary for February 05, 2026 to May 01, 2026.

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Callsign *Feb* *May*
JE2VVN 206 240
VE6LQ* New 209
DL2GRC 188 201
MI0ILE 200 201
DF2ET 179 200
DG7RO 104 200
S57NML 175 200
PS8ET 178 193
PY2RN 192 193
SA5IKN 184 193
YO3APJ 173 176
RA3S 164 175
EA2AA 167 172
HB9RYZ 169 171
SV8CS 167 171
YO2KHK 165 168
IK0USO 150 167
PE1L 154 163
LA6OP 159 160
DL2QB 139 154
IK5CBE 143 154
IK7FMQ 141 154
G0IIQ 107 150
YO2RR 145 150
LA0FA 133 138
DK3ZL 100 135
EA2BJM 100 129
SV1FJA New 128
IK6GZM 124 125
SP3QDM 100 119
TF1A 116 117
ON4IQ New 107
W2RS* New 106
IW1CAB New 105
HB9BIN New 104
I1YDT 100 101
OH3DP New 101
EA8JF New 100
EI3DP New 100
IK6ZDF New 100
IN3EQZ New 100
JE3ENP New 100
JH8FIH New 100
JN2QCV New 100
M5JFS New 100
SV8CKM New 100

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*Congratulations to the new DXCC Satellite holders! *
EA8JF is first DXCC Satellite holder from Canary Island and IL38 EI3DP is first DXCC Satellite holder from IO51
M5JFS is first DXCC Satellite holder from IO90

SV8CKM is first DXCC Satellite holder from KM08
SV1FJA is first DXCC Satellite holder from KM17
OH3DP is first DXCC Satellite holder from KP10
JH8FIH is first DXCC Satellite holder from QN14

[ANS thanks Jon Goering, N7AZ, for the above information.]

AMSAT-DL to Highlight QO-100 at Friedrichshafen

As part of the “HAM RADIO 2026” event at Friedrichshafen, Germany in June, AMSAT-Deutschland e. V. (AMSAT-DL) cordially invites all QO-100 users and amateur radio satellite enthusiasts to an open community workshop.

Building on the experiences with Qatar OSCAR 100 (QO-100) and current activities in the future geosynchronous Earth orbit (GEO) environment, the event invites amateurs to discuss together with the community what a future geostationary amateur radio payload could look like. The aim of the workshop is to gather ideas, requirements and perspectives from the user community and place them in a common context.

As a basis for the discussion, AMSAT-DL will present 2-3 concrete mission and payload concepts that reflect different development directions and are deliberately put up for open discussion:

1. “Enhanced QO 100+” (basic) An evolutionary approach that builds on the success of the QO 100: classic bent-pipe narrowband and wideband transponders, an advanced beacon architecture, multi-band downlinks and additional functions such as text and image transmission, e.g. for emergency and disaster communication, Internet of Things, etc.

2. Digital Innovation Lab (extended) A more experimentally oriented concept with extensive digital signal processing on board. The focus is on flexible, software-defined payload architectures (SDR), regenerative processing and a “digital playground” for new modulation and access methods and user experiments. But with the risk of being very software-heavy.

3. “High Frequency Pathfinder” (optional) An explorative approach with beacons and experiments in very high frequency ranges (mm Wave), supplemented by new antenna concepts, propagation and environmental measurements as well as earth and space imaging.

Open workshop

The workshop is designed to be explicitly open.

These concepts are not intended as ready-made solutions, but as a basis for discussion. The aim is to evaluate together with the participants which approaches are particularly interesting, sensible and sustainable for the amateur radio satellite community. Which aspects should be pursued further or in greater depth, but also the risks and dependencies should be addressed.

Both experienced satellite radio operators and anyone interested in the future development of amateur radio satellites, new technical concepts and possible applications are invited to attend.

Thematic focus:

- Experiences and lessons learned from the operation of QO-100
- User requirements and expectations for future GEO amateur radio payloads
- Discussion of the 2-3 future GEO concepts presented
- Possible technical development directions and areas for experimentation
- Role of the amateur radio community in future missions

The workshop thrives on participation, discussion and the exchange of ideas – it is not a frontal lecture, but an interactive format with an open end.

Organizational data:

- Event: futureGEO Community Workshop
- Date: Saturday, June 27, 2026
- Start: 16:00 hrs
- Duration: open end
- Venue: HAM RADIO 2026, Friedrichshafen
- Room: (to be announced and can be found in the lecture program)

Registration is not necessary – just come along and bring your ideas, questions and experiences!

[ANS thanks AMSAT-DL for the above information]

[image: SDR Gen 2 Ad - 2026]

PaperSat: A Satellite Tracking App for the M5Paper S3 Device

Ever out in the field on a sunny day and struggle to view your satellite tracking application on your phone? Want a refrigerator magnet that tracks satellites? PaperSat is now available for the M5Paper S3, <https://docs.m5stack.com/en/core/papers3> a small ESP32-S3 based e-ink device with capacitive touch and built-in battery. PaperSat downloads and caches the complete AMSAT nasabare.txt TLE collection, parses it locally, and lets users select any satellite via a paginated touch menu (10 satellites per page).

PaperSat on the M5Paper S3
Features

- *Advanced Polar Az/El Plot*: Large high-contrast sky view with elevation rings, azimuth radials (N/S/E/W labeled), live satellite position (filled square when above the horizon), direction-of-travel arrow, and smart pass trajectory. When the satellite is visible it draws the current AOS-to-LOS path; when below the horizon it automatically shows the *next* upcoming pass path.
- *Precise Pass Predictions*: The main screen displays the next three passes with UTC AOS → LOS times (including seconds) and peak elevation.
- *Live Tracking*: Real-time Azimuth and Elevation readout, adaptive screen refresh (15 seconds when the satellite is visible, 60 seconds otherwise for power efficiency – all-day battery life), UTC clock, battery percentage, and TLE freshness indicator.
- *Full On-Device Configuration*: Touch keyboard entry for 4- or 6-character Maidenhead grid locators (or manual lat/lon), WiFi setup via built-in WiFiManager captive portal, and manual UTC time/date setting.
- *Offline-First Design*: The entire TLE database is stored in LittleFS flash memory. The device works 100% offline after the initial download and gracefully falls back to cached data. TLEs auto-refresh every 24 hours when WiFi is available, or can be forced manually with the “Update TLEs” button on the Select Sat screen.

PaperSat was “vibe-coded” by Paul Stoetzer, N8HM, utilizing Grok 4.3. The next enhancement, coming soon, will be to switch the source of orbital elements from the soon to be deprecated TLE format to AMSAT’s modern General Perturbations data, likely via JSON. Feedback and suggestions are welcome.

Source code and binary releases are available at https://github.com/prstoetzer/papersat

[ANS thanks Paul Stoetzer, N8HM, AMSAT Executive Vice President, for the above information]

Launching Satellites With Zero Emissions

Most rockets burn thousands of litres of fuel before they even clear the launch pad. SpinLaunch aims to skip that phase. Using a vacuum sealed centrifuge at Spaceport America, the California based company spins payloads to 8,000 kilometres per hour before releasing them skyward. A small rocket motor handles only the final orbital insertion, bypassing the most fuel intensive part of the journey.

By September 2022, SpinLaunch completed ten successful suborbital tests, carrying hardware for NASA, Airbus, and Cornell University. While the flights themselves are less intense, the company's lab qualification in Long Beach proved that satellite components could survive 10,000 G of centrifugal force, the exact environment required for a kinetic launch. NASA's data confirmed the system is compatible with standard satellite hardware, clearing the first major hurdle for the technology.

The Orbital Accelerator will accelerate a launch vehicle containing satellites up to 8,000 kph using a rotating carbon fiber arm within a 100-meter diameter steel vacuum chamber. (Image credit: https://www.spinlaunch.com/ <https://www.spinlaunch.com/>)

A conventional rocket's fuel requirement increases exponentially with its payload. By providing 70% of the initial velocity on the ground, SpinLaunch's kinetic approach drastically reduces propellant needs. This puts projected launch costs between $1,250 and $2,500 per kilogram, less than half the price point of a SpaceX Falcon 9. Beyond cost, the system produces zero combustion emissions during the acceleration phase and minimizes orbital debris by eliminating expendable booster stages.

The transition from suborbital prototypes to a full orbital accelerator remains the project's greatest challenge. At orbital speeds, atmospheric drag becomes a violent engineering obstacle. While suborbital tests validated the physics at a smaller scale, the orbital class centrifuge remains in an exploratory phase as of May 2026. The question isn't whether the centrifuge can spin; it's whether a vehicle can survive the transition from a vacuum chamber to the thick atmosphere at hypersonic speeds.

[ANS thanks Futura for the above information. Read the full article at https://www.futura-sciences.com/en/no-more-rockets-the-wild-new-tech-launching-satellites-with-zero-emissions_31307/ <https://www.futura-sciences.com/en/no-more-rockets-the-wild-new-tech-launching-satellites-with-zero-emissions_31307/>.]

Changes to AMSAT TLE Distribution for May 15, 2026

Two Line Elements or TLEs, often referred to as Keplerian elements or keps in the amateur community, are the inputs to the SGP4 standard mathematical model of spacecraft orbits used by most amateur tracking programs. Weekly updates are completely adequate for most amateur satellites. TLE bulletin files are updated daily in the first hour of the UTC day. New bulletin files will be posted immediately after reliable elements become available for new amateur satellites. More information may be found at https://www.amsat.org/keplerian-elements-resources/ <https://www.amsat.org/keplerian-elements-resources/>.

This week there are no additions or deletions to the AMSAT TLE distribution.

[ANS thanks Joe Fitzgerald, KM1P, AMSAT Orbital Elements Manager, for the above information.]

AMSAT Remove Before Flight Key Tags Now Available
Yes, These are the Real Thing!
* <https://www.zazzle.com/amsat_car_flag-256716714380264543>*

Your $20 Donation Goes to Help Fly a Fox-Plus Satellite Includes First Class Postage (Sorry – U.S. Addresses Only) Order Today at https://www.amsat.org/product/amsat-remove-before-flight-keychain <https://www.amsat.org/product/amsat-remove-before-flight-keychain/>

Receiving DATV From the ISS

Looking for something new to do? How about receiving DATV from the ISS? Please note that the HamTV system is back on board but awaiting re-installation. Please monitor ARISS-EU or ARISS-ON for the very latest news on the troubleshooting efforts.

If interested, then go to the ARISS-EU website for complete details. Look for the buttons indicating Ham Video: http://www.ariss-eu.org/

For assistance, ARISS mentor Kerry N6IZW, might be able to provide some insight. Contact Kerry at kbanke(a)sbcglobal.net

The HamTV webpage: https://www.amsat-on.be/hamtv-summary/

[ANS thanks ARISS for the above information.]

ARISS News

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.

RECENTLY COMPLETED
Tobe Junior High School, Tobe, Japan, direct via JR5YED
The ISS callsign was OR4ISS
The scheduled crewmember was Sophie Adenot, KJ5LTN
The ARISS mentor was 7M3TJZ/ JA1CJP/ MØXTD
Contact was successful: Tue 2026-05-12 09:30:56 UTC 73 degrees maximum elevation
Congratulations to the Tobe Junior High School students, Sophie, mentors 7M3TJZ/ JA1CJP/ MØXTD, and ground station JR5YED!

UPCOMING
“Memorial Complex of Soviet Pilot-Cosmonaut A.G. Nikolaev”, Chuvashia, Russia, direct via TBD
The ISS callsign is presently scheduled to be RSØISS
The scheduled crewmember is Sergey Kud-Sverchkov
The ARISS mentor is RV3DR
Contact is go for Mon 2026-05-18 17:25 UTC

N.I. Lobachevsky Lyceum and School No. 132, Kazan, Russia, direct via TBD
The ISS callsign is presently scheduled to be RSØISS
The scheduled crewmember is Sergey Kud-Sverchkov
The ARISS mentor is RV3DR
Contact is go for Wed 2026-05-20 15:50 UTC

Pedagogical Lyceum of Blagoveshchensk State Pedagogical University, Blagoveshchensk, Russia, direct via TBD
The ISS callsign is presently scheduled to be RSØISS
The scheduled crewmember is Andrey Fedyaev
The ARISS mentor is RV3DR
Contact is go for Thu 2026-05-21 08:50 UTC

Colegio San Lucas, Tigre, Buenos Aires, Argentina, telebridge via IK1SLD
The ISS callsign is presently scheduled to be OR4ISS
The scheduled crewmember is Sophie Adenot, KJ5LTN
The ARISS mentor is VE6JBJ
Contact is go for: Thu 2026-05-21 14:57:34 UTC 41 degrees maximum elevation

POIC at Marshall Space Flight Center, Huntsville, AL, telebridge via IK1SLD
The ISS callsign is presently scheduled to be OR4ISS
The scheduled crewmember is Chris Williams, KJ5GEW
The ARISS mentor is KI5SDP
Contact is go for: Fri 2026-05-22 15:46:38 UTC 55 degrees maximum elevation

Many times a school may make a last minute decision to do a Livestream or run into a last minute glitch requiring a change of the URL but we at ARISS may not get the URL in time for publication. You can always check https://live.ariss.org/ to see if a school is Livestreaming.

The crossband repeater continues to be active (145.990 MHz up {PL 67} & 437.800 MHz down). If any crewmember is so inclined, all they have to do is pick up the microphone, raise the volume up, and talk on the crossband repeater. So give a listen, you just never know.

ARISS is still in the process of troubleshooting and testing the APRS system. It is currently active on 145.825 MHz up & down.

Ham TV is currently transmitting a test signal at 2395.00 MHz.

As always, if there is an EVA, a docking, or an undocking; the ARISS radios are turned off as part of the safety protocol. Powering down in support of payloads operations:
Power Down – 2026/133 (May 13) at 12:10:00 UTC
Power Up – 2026/140 (May 20) at 14:55:00 UTC

Note, all times are approximate. It is recommended that you do your own orbital prediction or start listening about 10 minutes before the listed time.

The latest information on the operation mode can be found at https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information.]

Want to fly the colors on your own grid expedition?
Get an AMSAT car flag and other neat stuff from our Zazzle store <https://www.zazzle.com/store/amsat_gear>!

25% of the purchase price of each product goes towards
Keeping Amateur Radio in Space

AMSAT Ambassador Activities

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

May 15-17, 2026
Dayton Hamvention
Greene County Fair and Expo Center
210 Fairground Road

Xenia 45385
https://hamvention.org/

October 8-11, 2026 44th AMSAT Space Symposium and Annual Membership Meeting
Crowne Plaza JAX Airport
14670 Duval Road
Jacksonville, FL 32218

For more information go to: https://www.amsat.org/ambassador/ <https://www.amsat.org/ambassador/>

[ANS thanks Bo Lowrey, W4FCL, Director – AMSAT Ambassador Program, for the above information.]

Satellite Shorts from All Over

+ We are sorry that the M2 Leo Pack antennas are not currently available from the AMSAT Store. They are on back order with M2 and there is no estimated date for resumption of filling orders. Please watch the AMSAT online store at https://www.amsat.org/shop/. When available, they will be back in stock in the store. (ANS thanks Bruce Paige, KK5DO, AMSAT Board member and manager of the AMSAT Store.)

+ NASA's Curiosity Mars rover got a rock stuck to the drill on the end of its robotic arm and, after waving the arm and running the drill a few times, finally detached the rock. On April 25, 2026 Curiosity drilled a sample from a rock nicknamed "Atacama," which is an estimated 1.5 feet in diameter at its base, 6 inches thick and weighs roughly 28.6 pounds (13 kilograms). When the rover retracted its arm, the entire rock lifted out of the ground, suspended by the fixed sleeve that surrounds the rotating drill bit. Drilling has fractured or separated the upper layers of rocks in the past, but a rock has never remained attached to the drill sleeve. The team initially tried vibrating the drill to shake off the rock, but saw no change. Then, on April 29, they tried reorienting Curiosity's robotic arm and vibrating the drill again. Finally, on May 1, Curiosity's team tried again, tilting the drill more, rotating and vibrating the drill, and spinning the drill bit. The team planned to perform these actions multiple times but the rock came off on the first round, fracturing as it hit the ground. (ANS thanks NASA for the above information.)

+ NASA this week released thousands of pictures captured during last month's Artemis II mission around the moon. You can find them all at https://eol.jsc.nasa.gov/Collections/Artemis/Artemis2/. (ANS thanks Engadget.com and NASA for the above information.)

+ Russian company Bureau 1440 has brought into low orbit the first 16 broadband internet satellites of the new Rassvet constellation, already dubbed by observers and local media the Russian answer to SpaceX's Starlink. It's an ambitious global internet project that experts say could conceal much broader strategic goals, with functions including military and communications control. The launch took place on March 23 at 17:24 UTC from the military's Plesetsk Cosmodrome using the Soyuz-2.1B launcher, and marked the first step in building an infrastructure that is expected to have at least 300 satellites by 2030. (ANS thanks Wired for the above information. Read the full article at https://www.wired.com/story/meet-rassvet-russias-answer-to-starlink/#intcid=_wired-verso-hp-trending-bktb_107f2a63-5476-4752-bbb4-bd42c943c4f1_cygnus-personalized .)

+ A mission to prevent a $500 million NASA space observatory from meeting a fiery demise just passed a notable prelaunch testing milestone. The Neil Gehrels Swift Observatory, a spacecraft launched in 2004, is at risk of falling back through the atmosphere and burning up without intervention. On

May 8, NASA announced that the Link spacecraft, manufactured by Katalyst Space Technologies to intervene before Swift’s fate is sealed, completed its slate of environmental testing at the agency’s Goddard Space Flight Center in Greenbelt, Maryland. Swift doesn’t have its own onboard propulsion system and would naturally decay in orbit over time. However, increased solar activity in recent years accelerated the lowering timeline for the observatory, dropping it from about 600 km to 400 km, with anticipated reentry in late 2026 without intervention. That’s why in September 2025, NASA awarded Katalyst a $30 million contract to develop a spacecraft capable of docking with Swift and boosting its orbit. (ANS thanks Spaceflight Now for the above information. Read the full article at https://spaceflightnow.com/2026/05/08/rescue-mission-for-nasas-500-million-space-telescope-passes-key-testing-milestone/ .)

+ SpaceX announced that it is planning a launch of the *first Starship version 3* <https://spacenews.bluelena.io/lt.php?x=4lZy~GDEUqPL5a.qzw5MgRNr1nUjkNXyjPpiXnM4InHMDH78_Uy7xOFw13Uh-RVfjDZo3XLJJ3Xs55F_yuxIUfFu3HQmi8> vehicle as soon as May 19 from its Starbase facility in South Texas. Liftoff is planned for 22:30 UTC. (ANS thanks SpaceNews for the above information.)

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

- Societies (a recognized group, clubs or organization).
- Students are eligible for *FREE* membership up to age 25.
- Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week’s ANS Editor, *Mark Johns, KØJM*
mjohns [at] amsat.org <http://amsat.org>

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